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Francophone West Africa Biotechnology Report

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Report Highlights:

This report summarizes the status of national biosafety standards in francophone West Africa and highlights efforts to harmonize biosafety regulations within the region through initiatives implemented by the West African Economic and Monetary Union (WAEMU), the Interstate Committee for Reducing Desertification in the Sahel/Institute of the Sahel (CILSS/INSAH) and the Economic Community of West African States (ECOWAS). These three regional organizations have been working to minimize duplicative or overlapping initiatives among the various regulations and assessment tools proposed to countries in the region. An ad hoc committee, which includes these three organizations, was formed in April 2009, with a primary responsibility of ensuring coordination on biosafety issues among countries in the region. Mali, Togo and Senegal now join Burkina Faso as the francophone countries in the region with approved biosafety legislation at the national level.

Section I. Executive Summary:

Although West Africa is experiencing growing interest in the introduction and development of biosafety policies and agricultural biotechnology applications, only a few countries have adopted the Cartagena protocol on biosafety. In response to the significant progress made in biotech development in Burkina Faso and the recent WAEMU [1] , CILSS/INSAH [2] and ECOWAS [3] initiatives, more governments in the region have become interested in developing biosafety regulations and are actively participating in regional policy harmonization projects and biotech capacity building programs. This is of particular importance in West Africa, a region where agricultural yields remain among the lowest in the world, and the agricultural resource base is threatened by plant diseases, environmental stress and climate changes. However, the overall pace for approval of biosafety regulatory frameworks and the subsequent use of biotech applications in research and commercial development is very slow. Senegal's National Assembly and Senate approved its biosafety regulations in July 2009.

Note: This report draws on contributions from USAID's International Research and Biotechnology group.

[1] West African Economic and Monetary Union: includes Benin, Burkina Faso, Cote d'Ivoire, Guinea Bissau, Mali, Niger, Senegal, and Togo.
[2] CILSS: The Permanent Interstate Committee for Drought Control in the Sahel includes Cape Verde, The Gambia, Guinea Bissau, Burkina Faso, Mali, Mauritania, Niger and Senegal. INSAH is the Institut du Sahel.
[3] The Economic Community of West African States includes Benin, Burkina Faso, Cape Verde, Côte d'Ivoire, Gambia, Ghana, Guinea, Guinea-Bissau, Liberia, Mali, Niger, Nigeria, Senegal, Sierra Leone and Togo.

Section II. Biotechnology Trade and Production:

While Burkina Faso remains the only francophone West African country in the region with an operational framework for the production and marketing of genetically modified organisms, Mali, Senegal and Togo also have approved biosafety legislation in the past year. The lack of implementation regulations places considerable limitation on the level of research in agricultural biotech applications that these countries can implement.

Burkina Faso is currently multiplying Bt cotton seeds and has commercially planted an estimated 106,000 ha of Bt cotton this year. Bt cowpea is under research in Burkina Faso and is the next likely biotech crop to be tested there.

Section III. New Technologies:

Animal New Technologies

The Senegalese Agricultural Research Institute (ISRA) and a few other public research centers have ongoing research activities relevant to the production of molecular vaccines for local use. However, output is quite small owing to a lack of equipment, among other things.

Section IV. Biotechnology Policy:

Regional Biosafety Regulatory Initiatives
WAEMU launched the West Africa Regional Biosafety initiative in June 2009 with funding from UNEP-GEF and the World Bank. The primary objective is to harmonize biosafety regulations in the eight WAEMU countries to protect each member country from potential risks associated with the introduction of living modified organisms, as well as provide capacity building assistance for policy development. Outlined under the program there are four goals:

- Development of common methods of risk assessment and environmental risk management
- Development of a common framework for biosafety regulations
- Development of specific regulations and standards under the framework
- Establishment of a regional Biosafety laboratory in Burkina Faso

Additionally, each country will establish a National Coordination Committee that will serve as the liaison between the country and the Regional Coordination Committee. Member countries will also create a National Biosafety Committee under the authority of the Ministry of Environment to oversee regulations, risk assessments and management of biotech products.

INSAH, the technical wing of CILSS, is implementing a regional biosafety framework for ECOWAS countries with an aim of developing a mechanism for the introduction, risk assessment and management of biotech products. The government of each member country approved the concept in 2006. Under this plan, ECOWAS would establish a regional technical body, comprised of one representative from each ECOWAS member state, responsible for performing risk assessments and providing recommendations to national governments. Each country will also establish a Competent National Authority and also a National Coordination Committee as the final decision on the introduction of new bioengineered crops would be at the individual member country level. A draft biosafety regulation is being circulated to each ECOWAS member country for feedback.

CORAF/WECARD (West and Central African Council for Agricultural Research and Development) is implementing a regional biosafety and biotechnology action plan for ECOWAS countries. This program has a focus on training, research and development, communication and information, and facilitation at the political level. The main output of the program will be better regional coordination and cooperation in agricultural biotechnology, real tools and biotechnology products used in agriculture, as well as increased agricultural productivity and improved technical capacity for scientific experts, regulators and producers.

These regional efforts all appear to have similar or complementary goals or objectives, which could lead to duplication of efforts. In some areas, the regulations may actually conflict. For example, the current UEMOA approach to regional harmonization would give priority or precedent to the regional approvals, whereas the ECOWAS approach gives priority to national approvals. CILSS, ECOWAS, WAEMU and CORAF have been meeting to see how they can partner together to implement one unified strategy. Even so, there are still concerns about the regional approach and how it will interplay with national biosafety frameworks.

Biosafety Regulations and Policies in C-4 countries, Cote d'Ivoire, Guinea Bissau, Togo and Senegal

Burkina Faso
Burkina Faso is the only francophone West African country with a functioning biosafety regulatory

system and thus the only country that has approved the commercial release and use of biotech products by farmers and other agricultural users. In crop year 2009/10, it is estimated that over 106,000 ha of Bt cotton were commercially planted in Burkina Faso.

Benin
Although the government of Benin has ratified the Cartagena Protocol and established a National Biosafety committee, Benin still enforces a moratorium prohibiting the production, sale and import of biotech crops and foods.

Mali
Since ratifying the Cartagena protocol in 2002, Mali's parliament passed legislation in 2008 to establish a regulatory system for agricultural and food biotechnology, thereby starting the process for the approval of agricultural biotechnology. This law aims to ensure an adequate level of protection against any potential adverse effects of modern agricultural biotechnology against biological diversity, the environment or human health. The law has provisions covering the import, export, transit, contained use, and release or introduction into the market of any genetically modified organisms, be it for pharmaceutical, food feed or other agricultural proposes. There is also provision in the law for mandatory labeling for all products made from GMOs.

The institutional framework is composed of:

- The National Competent Authority (NCA) which is under the Ministry in charge of the Environment. The NCA is in charge of monitoring and controlling of the implementation of this law. It will take into account the recommendations and instructions of the National Biosafety Committee.

- The National Focal Point that will liaise with the Cartagena Protocol on biosafety, BCH and will facilitate the information exchanges between the NCA and the different organs.

- The National Biosafety and Biotechnology Committee has a mandate of 3 years, renewable by two thirds of the members. It consists of representatives from some ministries and departments, civil society, media, the private sector, socio professional organizations and associations.

- Public Biosafety Committee has to establish security control and authorization procedures. It is composed of different national institutions.

- The legal authority for biosafety regulation is given to the Ministry of Environment which is required to approve authorization for any activity involving GMOs and their products.

Senegal
Senegal ratified the Cartagena Protocol on Biosafety in October 2003 and its biosafety law along with two decrees were adopted by the government in 2008 and ratified by the parliament in June 2009. However, it has not yet been promulgated (signed by the President). The National Biosafety Framework has also been completed but is still not in operation.

The Ministry of Environment is in charge of authorizing any importation or use of GMOs. It is supported by the National Biosafety Authority (NBA) for administrative issues and the National Biosafety Committee for technical issues. The NBA is composed of 17 members from different ministries and the presidency. The Executive Director and members of the NBA are appointed by

ministerial order.

The National Biosafety Committee is responsible for risk assessments related to the import, export, handling, transit, confined use, release or launching of GMOs or derived products. Its 30 members consist of scientists, the public and private sectors, and members of the general public. The current National Biosafety Committee will be replaced by a new one that includes more scientists with specialized skills in risks assessment.

Article 40 of the biosafety law states that all GMO products used for direct animal or human food or for transformation or introduction into the environment should be labeled as "contains GMOs".

Senegal has many research laboratories such as the Senegalese Institute for Agricultural Research (ISRA), Cheikh Anta Diop University of Dakar (UCAD), and the Regional Center for Studies on Plant Drought Resistance (CERAAS), but isn't conducting any field trials.

Cote d'Ivoire
Cote d'Ivoire did not ratify the Cartagena Protocol, largely owing to issues concerning its draft biosafety law. The national biosafety framework was established in 2005 and has provisions for a national biosafety commission (CNBIOS) which will be operational once the biosafety law is approved. The CNBIOS will be the authority on biosafety. A biosafety bill was drafted in May 2008 and sent to the Ministry of Environment for comments before being sent to government for adoption and ultimately the National Assembly for approval. The Ministry of Environment is the focal point for the Cartagena Protocol.

Cote d'Ivoire has laboratories (LCB, CNRA, RETRO-CI, IPCI, LANADA, and INSP) of good international standing, though there is often a lack of adequate equipment and human resources.

Chad
Chad does not have agricultural biotechnology regulations and has not yet signed the Cartagena Protocol.

Guinea-Bissau
A biosafety bill was drafted in 2006 and a National Biosafety Committee was established. The bill has not yet been submitted to the Government for approval and could benefit from technical assistance and capacity building support to the National Biosafety Committee.

Togo
Togo ratified the Cartagena Protocol and completed the National Biosafety Framework in December 2004. The biosafety law was adopted by the parliament in December 2008. Biosafety in Togo is characterized by 2 regulations: the National Biosafety Framework and the law on the Prevention of Biotechnology Risks. Even though Togo is not yet ready for modern biotechnology it has a few laboratories working in this area; namely the Institut Togolais de Recherche Agronomique (ITRA) and the University of Lome. All these laboratories, however, are ill-equipped and in real need of capacity building support.

Section V. Marketing:
Although most countries in West Africa have ratified the Cartagena Protocol on Biosafety, only Burkina

Faso, Ghana, and Nigeria have functioning legislation allowing field trials of GM products; and in francophone West Africa only Burkina Faso has regulations that allow for the commercialization of GM crops.

There are no approved regulations on the import of biotech products into most WAEMU countries. However, most of these countries receive commercial and food aid commodities containing biotech products from the United States and elsewhere. Senegal and other member countries also import soybean oil, soybean meal and corn from Brazil and Argentina, almost all of which is biotech or derived from GMOs.

Section VI. Capacity Building and Outreach:

AU-NEPAD established the Africa Biosafety Network of Expertise (ABNE) in 2008 to actively support capacity building in biosafety in the region. The Africa Biosciences Initiative (ABI) under the AU-NEPAD has also created four bioscience network centers to drive the development of biotechnology and other biosciences. One such network is the West Africa Biosciences Network in Dakar, Senegal.

Despite significant progress made across the region to move legislations forward and efforts for harmonizing and coordinating policies, technical capacity in biosafety regulations and biotechnology research is very limited. Thus, even when regulations are approved and in force most countries will no doubt face difficulties in assessing requests for field trials and commercial uses. Countries such as Benin, Burkina Faso, Mali, and Senegal are likely to move ahead faster because of their advantage in human resources and research capacity. The WAEMU and ECOWAS biosafety projects intend to assist countries develop in-house biosafety regulatory capacity and conduct risk assessments research.

Workshop held in Dakar on biosafety and biotechnology capacity building for West African scientists and regulators

Senegal hosted an international workshop on biosafety and biotechnology capacity building for regulators and trainers at Cheikh Anta Diop University - Dakar (UCAD) on July 8 –10, 2009 that was funded by USDA's Emerging Markets Program. UCAD organized this workshop in collaboration with NEPAD-ABNE and Michigan State University with sponsorship from USDA. The main objectives of the workshop were building/strengthening capacity for regulators, scientists and graduate students in agricultural biotechnology and biosafety; and facilitating interaction between regulators and scientists so as to have better understanding of each other's roles in the use of genetic engineering tools to improve food security and make science-based decisions on regulatory matters. The conference created a platform for sharing information on food safety and environmental biosafety with a focus on foods derived from genetically engineered crops. There was also discussion of ongoing regulatory activities and the regional biosafety initiatives for West Africa being implemented by CILSS, WAEMU, and WECARD.

Participants came from seven West African countries: Burkina Faso, Cote d'Ivoire, Ghana, Mali, Nigeria, Senegal and Togo, and included senior officials and regulators from National Biosafety Committees/Authorities agricultural scientists, students and Intellectual Property Rights experts. Also in attendance were representatives from FAO, UNDP, USAID, USDA and various media organizations. Overall, there were 60 participants including graduate students of UCAD.

Professor Marceline Egnin of Tuskegee University, Alabama, a biotech plant geneticist and expert on GM sweet potato, was also an invited guest speaker and participant at the workshop. Professor Egnin, who was invited to Dakar under the State Department's Embassy Speaker's Program, also gave presentations and mini-symposiums to students and faculty at UCAD on the history and techniques of plant genetics as well as her research of genetically modified sweet potato.

Workshop participants felt that although a positive policy environment exists for technology development, much more needs to be done to generate requisite data on risk assessment and management, especially for crops indigenous to the sub-region. It was felt that even in places where data exists, there is little or no sharing of information among stakeholders. There is also a lack of manuals on Standard Operating Procedures (SOPs) for risk assessment in environmental safety and food safety.

The following key recommendations were put forward for future activities in the region:

- Intensify training of scientists in the fields of biotechnology and biosafety to achieve the requisite critical mass. An additional measure is to have well-resourced laboratories and improved working conditions for scientists and regulators to stem the brain drain;
- Encourage resource pooling and sharing across the sub-region. e.g. allow open access to centers of excellence;
- Create platforms for public-private dialogue for confidence building and partnerships; and
- Continue reminding decision-makers of the Maputo Declaration to commit one percent of Gross Domestic Product to Science and Technology.

It is hoped that this workshop has contributed to the ongoing effort to educate and sensitize governments, legislators and the public to the value of agricultural biotechnology and its potential to help improve food security in the region. The workshop did succeed in stimulating a positive debate of the advancement of biotechnology in Senegal – after the workshop the President of Senegal, Honorable Abdoulaye Wade, requested a meeting with the UCAD organizer and biotech researcher Dr. Mame Oureye Sy and Dr. Marceline Egnin. In a related statement, the President publicly endorsed the adoption of biosafety measures and promoted the advancement of biotechnology in Senegal.

Section VII. Author Defined:
Reference Sources

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Convention on Biological Diversity – http://www.cbd.int/biosafety
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